BANGALORE WATER SUPPLY AND SEWERAGE BOARD
Office of the Chief Engineer (Project), Cauvery Bhavan, Bangalore-560009

No. BWSSB/CE(P)/ACE(Cst-DCW)ACE(P)-1/2/1012 /2024-25 Dt: 21 .08.2024

ADDENDUM TO TENDER THROUGH KPP PORTAL ONLY

(https://kppp.karnataka.gov.in)

Ref:- INDENT NO:BWSSB/2024-25/SE0025

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In continuation to the above tender notification invited vide INDENT NO. cited under reference, an Addendum is issued as below:

1. The qualification of Evaluated Key Experts and non-evaluated (key as well as non-key personnel) as well as their respective man-months is presented in the subsequent tables below (Table 4):

Sl. No	Key Expert Position	No of Positions	Qualification and Experience Requirement	Total Man-months	Evaluated Position – Yes / No	Part A	Part B	Part C
1	Team Leader - Sewerage	1	Should have at least 20 years of experience in urban wastewater / sewerage related projects. Should have Master's Degree in Civil / Environmental / Mechanical / Chemical Engineering. He should be well versed with e-governance procedures and handled coordination of a project with similar size. Should have handled at least 2 comprehensive urban wastewater / sewerage project of each capacity of 100 MLD involving construction supervision, contract management, commissioning assistance should have handled at least one ODA Loan project funded by multilateral and bilateral funding agencies.	50	Yes	4	4	42

Sl. No	Key Expert Position	No of Positions	Qualification and Experience Requirement	Total Man-months	Evaluated Position – Yes / No	Part A	Part B	Part C
2	Deputy Team Leader	1	Should have at least 20 years of experience in urban wastewater / sewerage related projects. Should have Master's Degree in Civil / Environmental / Mechanical / Chemical Engineering. Should have handled at least one comprehensive urban sewerage/sewage treatment project comprising of sewer, sewage pumping stations and sewage treatment plants having an area of 100 sqkm, including process design, detailed design, monitoring and commissioning of sewerage projects including PMC, Should have handled at one ODA Loan project.	30	Yes	4	4	22
3	Contract Engineer	1	hould have at least 15 years overall and 10 years relevant experience with Bachelor Degree in Civil / Mechanical/ Electrical Engineering or equivalent. Should have worked in Externally Funded projects (World Bank/ JICA / ADB etc).	20	Yes	4	4	12
4	Senior Design Engineer-Process	1	Should have at least 15 years overall with 5 years relevant experience with Bachelor in Environmental / Chemical/Civil. Should have completed one project in India in waste water treatment of capacity of 50 MLD or more	25	Yes	4	4	17
5	Senior Design Engineer-Geo Technical	1	Should have at least 15 years overall experience with Masters in Geo-technical and Bachelor in Civil/Environmental.	15	Yes	2	2	11
6	Sr. Design Engineer - Structural	1	Should have at least 15 years overall with 10 years relevant experience with Masters in Structural/Geo-technical and Bachelor in Civil/Environmental. Should have experience in water retaining structures	30	Yes	2	2	26
7	Sr. Design Engineer - Mechanical	1	Should have at least 15 years overall with 10 years relevant experience with Bachelor in Mechanical. Should have completed one project in India in water treatment / pumping facility of capacity of 100 MLD or more	30	Yes	2	1	27

Sl. No	Key Expert Position	No of Positions	Qualification and Experience Requirement	Total Man-months	Evaluated Position – Yes / No	Part A	Part B	Part C
8	Sr. Design Engineer - Electrical	1	Should have at least 15 years overall with 10 years relevant experience with Bachelor in Electrical. Should have completed one project in India in water treatment / pumping facility of capacity of 100 MLD or more	30	Yes	2	1	27
9	Sr. Design Engineer - Instrumentation, Control and Automation	1	Should Bachelor degree in Electrical / Instrumentation Control and Automation with Should have at least 15 years overall experience, with at least 10 years relevant experience in instrumentation control and automation in water supply transmission and sewerage, pumping and treatment. Should have completed one project in India in water treatment / pumping facility of capacity of 100 MLD or more involving Centralised SCADA system for a city comparable with Bangalore. Should have international experience	25	Yes	2	1	22
10	Environmental Expert	1	15 years overall with 10 years relevant experience with Masters In Environmental Engineering. Experience in conducting Environmental assessments of similar projects in water and waste water sector.	15	Yes	2	1	12
11	Sr. Resident Engineer	1	15 years overall and 10 years relevant experience with Bachelor Degree in Civil / Environmental/Mechanical Engineering or equivalent. Should have completed one project in India in waste water treatment facility of capacity of 50 MLD or more	40	Yes	0	2	38
12	Trenchless Technology expert	1	15 years overall with 10 years relevant experience with Bachelor In Civil/Environmental Engineering. Experience in trenchless technology in laying water / sewer lines.	10	Yes	1	1	8
13	Quality Assurances/Quality Control - Civil	2	10 years overall and 5 years relevant experience with Bachelor Degree in Civil Engineering	60	Yes	0	2	58
14	QA/QC – Electrical Engineering	1	10 years overall and 5 years relevant experience with Bachelor Degree in Electrical Engineering	30	Yes	0	1	29

Sl. No	Key Expert Position	No of Positions	Qualification and Experience Requirement	Total Man-months	Evaluated Position – Yes / No	Part A	Part B	Part C
15	QA/QC - Mechanical	1	10 years overall and 5 years relevant experience with Bachelor Degree in Mechanical Engineering	30	Yes	0	1	29
16	Junior Engineer - Hydraulics	1	5 years overall with 3years relevant experience with Bachelor in Environmental / Civil. Should have completed one project in India in waste water treatment of capacity of 50 MLD or more	15	No	2	1	12
17	Junior Engineer - Process	1	5 years overall with 3 years relevant experience with Bachelor in Environmental / Chemical. Should have completed one project in India in water treatment of capacity of 100 MLD or more	25	No	2	1	22
18	Junior Engineer – Structures	1	5 years overall with 3 years relevant experience with Bachelor in Civil Engineering.	30	No	2	1	27
19	Junior Engineer – Mechanical	1	5 years overall with 3 years relevant experience with Bachelor in Mechanical Engineering.	30	No	2	1	27
20	Junior Engineer – Electrical	1	5 years overall with 3 years relevant experience with Bachelor in Electrical Engineering.	30	No	2	1	27
21	Junior Engineer – Instrumentation control & Automation	1	5 years overall with 3 years relevant experience with Bachelor in Instrumentation / Electronics Engineering	20	No	2	1	17
22	Site Engineer – Civil	6	5 years overall with 3 years relevant experience with Bachelor in Civil Engineering.	180	No	-	-	180
23	Site Engineer – Mechanical	4	5 years overall with 3 years relevant experience with Bachelor in Mechanical Engineering.	80	No	-	-	80
24	Site Engineer – Electrical	4	5 years overall with 3 years relevant experience with Bachelor in Electrical Engineering.	80	No	-	-	80

Sl. No	Key Expert Position	No of Positions	Qualification and Experience Requirement	Total Man-months	Evaluated Position – Yes / No	Part A	Part B	Part C
25	Site Engineer – Instrumentation	2	5 years overall with 3 years relevant experience with Bachelor in Instrumentation / Electronics Engineering.	30	No	-	-	30
26	Safety Engineer	2	5 years overall with 3 years relevant experience with Bachelor in Civil Engineering.	60	No	-	-	60
		40		**1020**		**41**	**37**	**942**

2. Support Staff Man-months for the Entire Project duration

Sl. No	Position	No of Staff	Total No of Man-months
1	Auto cad- Drafts man	3	90
2	Office Admin	1	60
3	IT Support	1	60
4	Data Entry Operator	2	120
5	Office Assistants	2	120
	Total No of MMs – Support Staff		**450**

3. Major Tasks and Duties of Key Expert

Designation	Responsibilities
National Staff	
Team Leader – (Overall responsibility of laterals, conveyance, sewage treatment, and reuse in all stages)	Pre-Construction Stage – Design and package award stage: • General coordination • Supervises the Consultant's services • Review Bidding documents prepared by Contract specialist. Interact with client to provide input in particular conditions of the contract. • Assumes direct responsibility for day-to-day consulting services • Represents the Consultant's Team in all matters relating to the performance of services • Prepare monthly and quarterly progress reports • Interact and liaison with BWSSB, GOK as well as World Bank. Construction Stage: • General coordination • Supervises the Consultant's services during Construction • Assumes direct responsibility for day-to-day consulting services and construction activities on all the packages – • Coordinate with client and contractors for each package • Assist client in resolving construction issues as well as review and assist client in preparing progress charts for financial as well as construction activities. • Interact and liaison with BWSSB, GOK as well as World Bank.
Deputy Team Leader	• Assist Team Leader in carrying out all tasks and duties of Team Leader • Represent the Consultant's team during absence of the Team Leader Perform specific issues/aspects delegated by Team Leader in Sewage conveyance, pumping and WwTP, ISPS, lift stations and tasks related to the project.
Contract Engineer	• Assist the Team Leader and Deputy Team Leader on Contract Management • Preparation of Contract documents of all the awarded project components and signing of the Contracts • Liason with World Bank on the concurrence of the various Contracts • Contract Management of the Contracts • Provide Contract recommendations as per provisions of KTPP Act & World Bank conditions. • Provide recommendation of Extension of Time claims by the Contracts • Provide recommendation on the approval of various claims and variation in the Contracts

Designation	Responsibilities
Senior Design Engineer -Process	Pre construction stage. • Review existing designs and specifications as prepared in study report and DPR • Prepare basis of design for all the WWTP / ISPS packages • Prepare PQ documents and provide detailed evaluation of PQ and bidder submittals. • Prepare Bid document for each package considering selected basis of design and client requirements • Prepare cost estimates for comparative Assessment. • Assist client in technical evaluation of bids and making recommendations on selection of contractor for each package. • Direct local engineers attending the designs • Review and make recommendations to WWTP designs submitted by contractors. • Supervise process review during construction • Providing assessment and input during operation and maintenance – during Defect liability period. • Review and contractors' proposed O&M supervision work program and training programs • Coordinate the contractor's commissioning works • Coordinate the contractor's O&M supervision and training • Monitor and assess the effect of training and instruct any improvement of training services if necessary
Senior Design Engineer -Geo technical	Pre construction stage. • Assist & coordinating with the other Senior Design Engineer • Review existing designs and specifications as prepared in study report and DPR • Prepare basis of design for all the WWTP / ISPS packages • Prepare PQ documents and provide detailed evaluation of PQ and bidder submittals. • Prepare Bid document for each package considering selected basis of design and client requirements • Prepare cost estimates for comparative Assessment. • Assist client in technical evaluation of bids and making recommendations on selection of contractor for each package. • Review and make recommendations to WWTP designs submitted by contractors.
Senior Design Engineer (Structures)	Pre construction stage. • Review existing designs and specifications as prepared in study report and DPR • Prepare basis of design for all the WWTP / ISPS packages • Prepare PQ documents and provide detailed evaluation of PQ and bidder submittals. • Prepare Bid document for each package considering selected basis of design and client requirements • Prepare cost estimates for comparative Assessment.

Designation	Responsibilities
	• Assist client in technical evaluation of bids and making recommendations on selection of contractor for each package. • Direct local engineers attending the designs • Review and make recommendations to WWTP designs submitted by contractors. • Supervise process review during construction • Providing assessment and input during operation and maintenance – during Defect liability period. • Review and contractors' proposed O&M supervision work program and training programs • Coordinate the contractor's commissioning works • Coordinate the contractor's O&M supervision and training] • Monitor and assess the effect of training and instruct any improvement of training services if necessary
Senior Design Engineer (Mechanical)	Pre construction stage. • Review existing designs • Prepare the basic design of mechanical equipment for the WWTP packages including ISPS • Direct the local mechanical engineers attending the designs of mechanical works for the WWTPs as well as ISPS facilities • Prepare Specifications for mechanical works • Prepare Bill of Quantities for mechanical works • Construction stage • Check the shop drawings submitted by the contractors • Assess the substitution of products proposed by the contractors • Supervise the installation work of mechanical equipment • Attend the factory inspection together with PMC's engineer, if requested • Attend the trial operation of mechanical equipment
Senior Design Engineer (Electrical)	Pre construction stage. • Review existing designs • Prepare the basic design of electrical equipment, SCADA and I&C for the WwTP /ISPS facilities. • Direct the local electrical engineers attending the electrical designs of the WwTP / ISPS facilities. • Prepare Specifications for electrical works • Prepare Bill of Quantities for electrical works • Construction stage • Check the shop drawings submitted by the contractors • Assess the substitution of products proposed by the contractors • Supervise the installation work of electrical equipment

Designation	Responsibilities
	• Attend the factory inspection together with BWSSB engineer, if requested. • Attend the trial operation of mechanical equipment
Senior Design Engineer (Instrumentation Control and Automation)	Pre construction stage. • Review existing designs • Prepare the basic design of SCADA and I&C for the WwTP / ISPS including facilities • Direct the ICA engineers under him attending the designs- SCADA, I&C of the WwTP & ISPS facilities • Prepare Specifications for instrumentation / SCADA works • Prepare Bill of Quantities for instrumentation / SCADA works • Construction stage • Check the shop drawings submitted by the contractors • Assess the substitution of products proposed by the contractors • Supervise the installation work of electrical equipment • Attend the factory inspection together with BWSSB engineer, if requested • Attend the trial operation of mechanical equipment
Environmental Expert.	• Environmental Assessment and Monitoring • Regulatory Compliance ensuring the enforcement of regulatory guidelines, policies issued from the respective enforcing agencies. • Sustainability and Resource Management • Preparation and incorporation of Environmental & safety plans for the bidding. • Review of EMP and assist the client / contractor to obtain the consent from the KSPCB for operating the WwTPs.
Senior Resident Engineer – (Overall responsibility of laterals, conveyance, sewage treatment, and reuse in construction stage)	• Supervise process review during construction • Providing assessment and input during operation and maintenance – during Defect liability period. • Review and contractors' proposed O&M supervision work program and training programs for Distribution Control System • Coordinate the contractor's commissioning works • Coordinate the contractor's O&M supervision and training Monitor and assess the effect of training and instruct any improvement of training services if necessary

Designation	Responsibilities
Trenchless Expert.	• Review proposed alignments. • Preparation of detailed estimation with suitable trenchless technology Micro tunneling/ HDD method. • Preparation and adoption of trenchless method in the bid document. • Assist the Team Leader and Deputy Team Leaders and the Resident Engineers for execution of work.
Support Design Engineers (Junior engineer)	• Assist the respective design key experts on the various design and drawing approvals. • Review of the compliance of the comments provided by the experts in the revised designs and drawings submitted by the Contractor. • Attend all technical assignments from client.
Support Construction Supervision Engineers	• Assist the Team Leader and Deputy Team Leaders and the Resident Engineers in various construction supervisions works at site which included civil construction along with E&M installation works. • Monitor the QAP and safety compliance's at site. • Monitoring of the testing and commissioning at site
HRD and Institutional	• Recommend suitable Organisation strengthening measures to the utility for handling the O&M of the infrastructures created under the project. • Provide institutional strengthening and capacity building measures for BWSSB and its Project Monitoring and Operations Team • Review of the training plan submitted by the Contractor on various packages • Review of the O&M plan submitted by the Contractor of various contract packages.

Note: Any other relevant technical related to this TOR is speck same has to be part of TOR.

Others conditions remain unaltered.

Chief Engineer (Project)
BWSSB